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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,331	02/04/2002	Gunter Kunze	72.053	9486
23598 7590 12/18/2006 BOYLE FREDRICKSON NEWHOLM STEIN & GRATZ, S.C. 250 E. WISCONSIN AVENUE SUITE 1030 MILWAUKEE, WI 53202			EXAMINER SOOHOO, TONY GLEN	
			ART UNIT 1723	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	12/18/2006	PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/937,331

Applicant(s)

KUNZE ET AL.

Examiner

Tony G. Soohoo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10-6-2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5 pages (9/2006)</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.
2. Should applicant desire to obtain the benefit of foreign priority under 35 U.S.C. 119(a)-(d) prior to declaration of an interference, a certified English translation of the foreign application must be submitted in reply to this action. 37 CFR 41.154(b) and 41.202(e).

Failure to provide a certified translation may result in no benefit being accorded for the non-English application.

Drawings

3. The replacement drawings were received on 10-6-2006. These drawings are approved.

Claim Objections

4. Claim 13, line 13 is objected to because of the following informalities: The typographic error should be corrected to state "parameter that". Appropriate correction is required.

Claim interpretation

5. The term "densified state" is read in its broadest reasonable interpretation in light of the specification as being directed to the degree in which the material has settled or set, in other words, the amount of air bubbles/void is being removed by the vibration

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device, or the amount the concrete slurry is compacted or set. This is in contrast to the actual "density" of the hardened/cured (hardening?) material.

6. The production of the "signal based on a measured change in the operating parameter" is read in its broadest reasonable interpretation in light of the specification as being broad to encompass a visual signal processed by in a visual change within a display device, or an electrical signal from the sensor itself.

7. The recitation of "[an evaluation circuit] ... that produces a signal based on a measured change in the [of the motion of the operating parameter] that corresponds to a change in a densified state of the material", is read as only requiring the scope of a structure of : (a) evaluation circuit which produces (b) a signal which is based on (c) the change of the motion of the vibrator. Issues of the scope of the particular type of motion "that corresponds to a change in densified state of material" is deemed as being directed to the intended use and interpretation of the signal by a user.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 13-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steffen 6084327 filed (Dec 30, 1993 cited on PTO 1449) in view of Miura et al 4905499.

The Steffen 6084327 (Steffen '327) discloses a vibrator having a vibration unit housing 1a, 6a having an oscillator with an electric motor located in the vibration unit, (column 2, lines 1-6) including a vibration flask 1a, tube 4, switch 2a, cord 3, and a transformer frequency converter, column 1, lines 8-11, column 2 lines 6-10, or line 40, and claim 1. Steffen also teaches that the motor frequency (i.e. the vibration of the poker) may be controlled, column 3, lines 5-9.

The Steffen reference discloses all of the recited subject matter as defined within the scope of the claims with the exception of an evaluation circuit which measures a change to a measurement device which detects an operation parameter of the vibrator.

The Miura et al '499 reference discloses a electrically driven vibration unit 1A,13, which is capable of measuring the densified state of a fluid as it sets 9, a switching unit 11 with a circuit PC which takes the measured value of a frequency/phase/motion of the vibrator, see figure 11 and produces a signal to a display which may be interpreted by a user to indicated the densified state of the material, which was measured by the measurement device 1B. It is noted that measurement device 1B measures the motion of the vibrator, especially the probe 3 immersed in the fluid.

In view of the teaching by the Miura '499 reference, it is deemed that it would have been obvious to one of ordinary skill in the art to further provide for the Steffen '327 vibrator controller as taught by the Miura reference to the so as to better control and monitor the operation and state of the vibrator motion upon the material.

With regards to the use of accelerometers, such device measurement is fully capable of being measured by the piezoelectric ceramic members a and b, figures 3 to

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Z, by a mere measurement of the change of velocity of change of the values measured by the elements a and b. With regards to the positioning of the meters on a perpendicular orientation, the Miura et al reference discloses at least a transverse skewed orientation, the positioning of meters in a perpendicular orientation is old and well known, such as the art of measurement with strain gauges for ease of calibration, thus, It is deemed that it would have been obvious to one of ordinary skill in the art to utilize the sensors measuring devices as plural accelerometers, and position them in a perpendicular axe so as to provide a more precise measurement of vibration and provide a easier manner to calibrate the sensors.

10. Claims 13-17, 21 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steffen 6084327 filed (Dec 30, 1993 cited on PTO 1449) in view of by GB 1097651, (GB '651) cited on PTO 1449.

The Steffen 6084327 (Steffen '327) discloses a vibrator having a vibration unit housing 1a, 6a having an oscillator with an electric motor located in the vibration unit, (column 2, lines 1-6) including a vibration flask 1a, tube 4, switch 2a, cord 3, and a transformer frequency converter, column 1, lines 8-11, column 2 lines 6-10, or line 40, and claim 1. Steffen also teaches that the motor frequency (i.e. the vibration of the poker) may be controlled, column 3, lines 5-9.

The Steffen reference discloses all of the recited subject matter as defined within the scope of the claims with the exception of an evaluation circuit which measures a change to a measurement device which detects an operation parameter of the vibrator.

The GB '651 reference discloses a vibration unit 8, switch 10, a measuring device 3 for determining the power load which provides an indication of a meter reading signal so one may evaluate the measured value.

Note that the meter reading may be used as an indicator of RPM which directly measures the frequency of motion in which the vibrator vibrates in a "motion of the vibrator" and that the movement of the vibrator and movement of meter reading electrical and visual signal would provide for a person having ordinary skill in the art a manner to determine the change in the density state of the concrete that it is setting and that the removal of air bubbles is being achieved.

In view of the teaching by the GB '651 reference, it is deemed that it would have been obvious to one of ordinary skill in the art to further provide for the Steffen '327 vibrator controller as taught by the GB '651 reference to the so as to better control and monitor the operation and state of the vibrator motion effect upon the air bubble removal within the material.

11. Claims 13-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steffen 6084327 filed (Dec 30, 1993 cited on PTO 1449) in view of Heimbruch et al 5992238.

The Steffen 6084327 (Steffen '327) discloses a vibrator having a vibration unit housing 1a, 6a having an oscillator with an electric motor located in the vibration unit, (column 2, lines 1-6) including a vibration flask 1a, tube 4, switch 2a, cord 3, and a transformer frequency converter, column 1, lines 8-11, column 2 lines 6-10, or line 40,

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and claim 1. Steffen also teaches that the motor frequency (i.e. the vibration of the poker) may be controlled, column 3, lines 5-9.

The Steffen reference discloses all of the recited subject matter as defined within the scope of the claims with the exception of an evaluation circuit which measures a change to a measurement device which detects an operation parameter of the vibrator.

The Heimbruch (et al '238) reference discloses an electrically driven vibration unit 13, electric motor 18, switch to turn the motor on and off (not shown but assumed as inherent for all power drive motors), a measuring device (magnetic pickup sensor 40 and permanent magnet 42 or Hall type sensor) for determining the vibration speed of the vibrator which provides an indication of an electrical reading signal so one may evaluate the measured value by the display 66, and recorder 102. Any change in speed is a measurement of acceleration and thus has a direct correlation to the movement of the vibrator and would indicate "a change in densified state" of the material, i.e. the degree in which the material is being compacted, see column 1, lines 43-45.

Note that the meter reading may be used as an indicator signal of movement of the vibrator and that the changes of the meter indicator would provide for a person having ordinary skill in the art a visual signal a manner to determine the change in the density state of the concrete that it is hardening, see also column 1, lines 35-46 and column 6, lines 8-24.

In view of the teaching by the Heimbruch (et al '238) reference, it is deemed that it would have been obvious to one of ordinary skill in the art to further provide for the Steffen '327 vibrator controller as taught by the Heimbruch (et al '238) reference to the

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so as to better control and monitor the operation and state of the vibrator motion upon the material.

With regards to the use of accelerometers, such device are old and well known in the art of vibration and speed measurement and the positioning of such meters upon perpendicular axes are well known as pointed out above,

Accordingly ,it is deemed that it would have been obvious to one of ordinary skill in the art to substitute for the Hall sensors of measuring devices with plural accelerometers positioned in perpendicular axes so as to provide a more precise measurement of vibration and ease of calibration

12. Claims 13-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steffen 6084327 filed (Dec 30, 1993 cited on PTO 1449) in view of PCT WO99/47322 published 9/23/1999 (family of US reference Steffen et al 6544025).

The Steffen 6084327 (Steffen '327) discloses a vibrator having a vibration unit housing 1a, 6a having an oscillator with an electric motor located in the vibration unit, (column 2, lines 1-6) including a vibration flask 1a, tube 4, switch 2a, cord 3, and a transformer frequency converter, column 1, lines 8-11, column 2 lines 6-10, or line 40, and claim 1. Steffen also teaches that the motor frequency (i.e. the vibration of the poker) may be controlled, column 3, lines 5-9.

The Steffen reference discloses all of the recited subject matter as defined within the scope of the claims with the exception of an evaluation circuit which measures a change to a measurement device which detects an operation parameter of the vibrator.

The WO99/47322 published 9/23/1999, or US family reference to Steffen et al 6544025 (Steffen '025) reference discloses an electrically driven vibration unit 3, electric motor, a measuring device accelerometer 5 (a magnetic pickup sensor, permanent magnet type, or Hall type sensors are commonly known accelerometers) for determining the vibration speed of the vibrator which provides an indication of an electrical reading signal so one may evaluate the measured value by the display 8 (CRT T.V. screen). Column 3, lines 34-65. Any change in speed is a measurement of acceleration and thus has a direct correlation to the movement of the vibrator and would indicate "a change in densified state" of the material, i.e. the degree in which the material is being compacted.

Note that the CRT T.V. 8 may display a reading may be used as an indicator signal of movement of the vibrator and that the changes of the meter indicator would provide for a person having ordinary skill in the art a visual signal a manner to determine the change in the density state of the concrete that it is hardening.

In view of the teaching by the Steffen '025 reference, it is deemed that it would have been obvious to one of ordinary skill in the art to further provide for the Steffen '327 vibrator controller as taught by the Steffen '025 reference to the so as to better control and monitor the operation and state of the vibrator motion upon the material.

With regards to the use of accelerometers, such device are old and well known in the art of vibration and speed measurement and the positioning of such meters upon perpendicular axes are well known so as to provide a full measurement of the component axes of the motion of the device.

Accordingly, it is deemed that it would have been obvious to one of ordinary skill in the art to substitute for the Hall sensors of measuring devices with plural accelerometers positioned in perpendicular axes so as to provide a more precise measurement of vibration and ease of calibration

Response to Arguments

13. Applicant's arguments with respect to claims 13-21 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The DE 19722107 shows the use of a frequency converter to change the line frequency to a higher frequency for a vibrator published on 01 October 1998..

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony G. Soohoo whose telephone number is (571) 272 1147. The examiner can normally be reached on 8AM-5PM, Tue-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tony G Soohoo


TONY G. SOOHOO
PRIMARY EXAMINER

Approved
RS
12-2-06

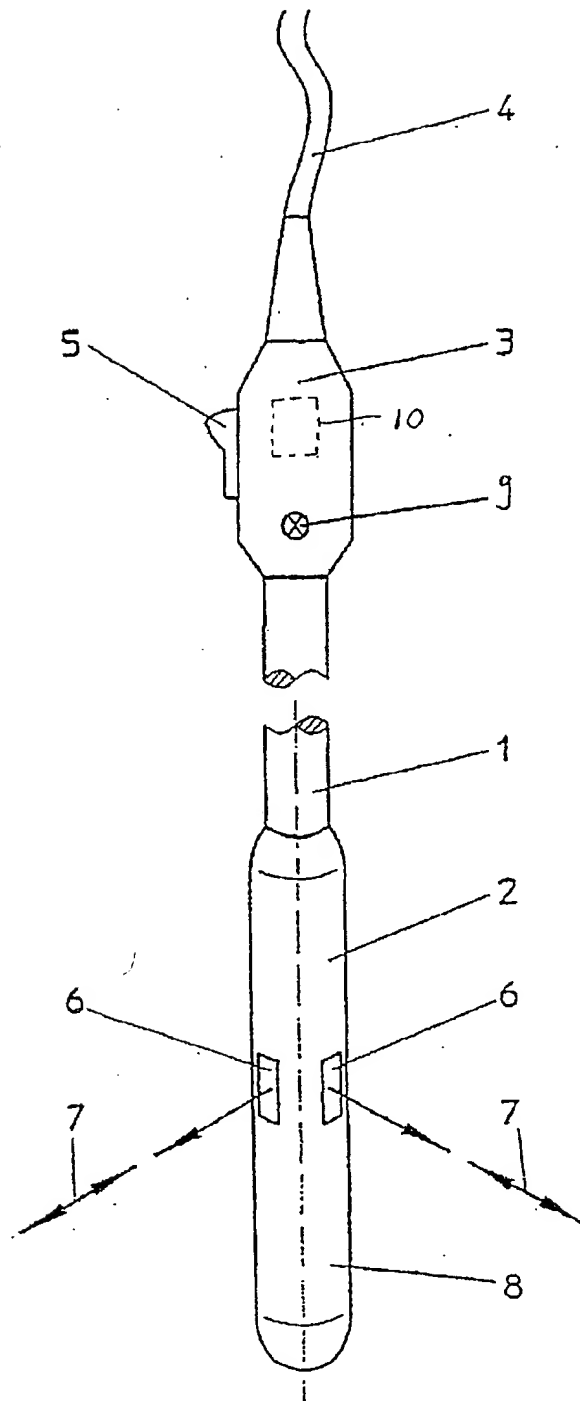


Fig. 1

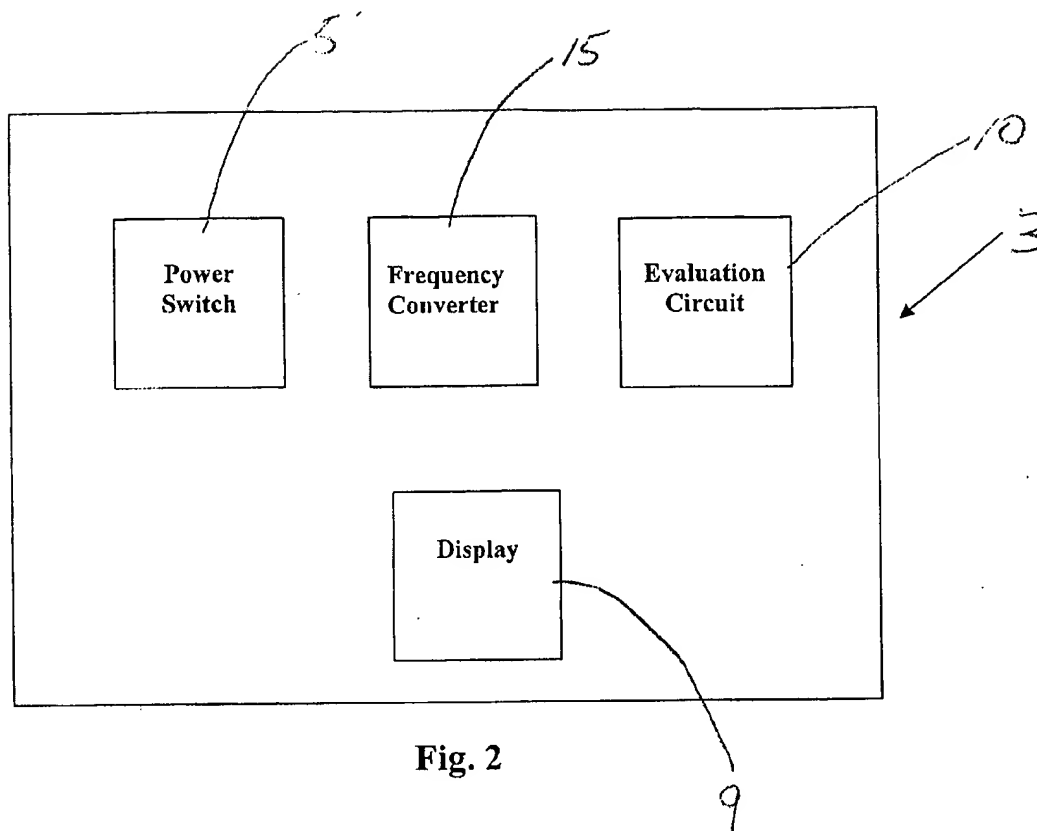


Fig. 2

Approved
JBS
12-12-06